

**Lee, Jeffrey K**

**From:** James Niermann [JimN@rmtowill.com]  
**Sent:** Tuesday, September 05, 2017 8:18 PM  
**To:** Lee, Jeffrey K  
**Cc:** Young, Raymond; Takahashi, Eugene H.; Roxanne Lee; Jaime Nishikawa; Carol Zuerndorfer  
**Subject:** FW: Honouliuli WWTP SUP Follow-up questions: Odor Control  
**Attachments:** Pages from HLI Sewer Basin Odor Control Assessment 2013 REVISED FINAL.PDF

Hello Jeffrey,

Responses from the project team to the Director's questions regarding odor control are noted below in blue.

What is the level of nuisance odor now? And how much will it be reduced once the project is completed?  
(Possible measurement in the form of Hydrogen Sulfide)

- There were 5 fence line violations (fence line monitors detecting exceedances of H<sub>2</sub>S parameters) from 2007 to 2009 – see attached excerpt from the Odor Control Assessment prepared by AECOM. For comparison, DOH ambient standard for H<sub>2</sub>S at the facility property line is 0.025 ppm (25 ppb). Since 2010, there haven't been any recorded fence line violations of the air quality permit parameters. However, facility operators recalled a possible violation in 2010: while they were rehabilitating the pre-aeration tank cover there was a west wind that blew onto the golf course. That might have resulted in an odor complaint, vs. a measured exceedance at the fence line monitoring stations.
- There is a significant amount of fugitive odors (not exceedances) now due to:
  - Undersized and very aged existing odor control systems.
  - Deteriorated covers allowing the release of odors.
  - Types of processes in current use which tend to generate more odors.
- After completion of the project:
  - Odor control systems that are designed and developed from modern analytical methods.
  - Applying appropriate ventilation requirements to create negative pressures and prevent any odors from escaping.
  - Updating the odor control systems to utilize current, more reliable technology.
  - Use of tank covers resistant to deterioration to provide for reliable encapsulation of any odors generated.
  - Utilizing treatment processes that, in sum, significantly reduces the odor generation potential from the facility.
- In sum, the planned OCS improvements will:
  - Reduce overall odor generation with the type of new treatment processes selected.
  - Encapsulate odors with new and corrosion resistant covers.
  - Apply modern OCS technology to analyze, capture, ventilate and treat odors.

Is the Cake Sludge Receiving Facility an accessory use to the HWWTP or is it a primary use, since it is processing sludge from other WWTPs?

- Not sure how primary and accessory are differentiated in this context. Sludge processing is an integral part of the wastewater solids treatment and disposal process.
- The facility will be used daily to unload approximately 4 to 12 truckloads of sludge.

Also could the Cake Sludge Receiving Facility be an enclosed area covering the whole truck during the transfer of solids to reduce odor nuisance?

- In concept, however the risk of nuisance odors from this facility to the general public (at the fenceline) is minimal and does not warrant the construction of a larger structure to house the truck and ventilate.
- Each truckload would take less than 5 minutes to discharge.

- The point where unloading will occur will have foul air suction lines to draw most of the air into the foul air treatment system, similar to the hood of an oven.
- Any fugitive air will be small in quantity and time and immediately diluted.
- The cake sludge itself, which should be adequately digested and dewatered, should itself have non- nuisance type smell. If it is not well digested the above contingencies will mitigate odor nuisance to the public.

If we get more information on odor conditions, monitoring records, we'll send it your way. I'll be in the office tomorrow afternoon if you'd like to go over this information. We have a meeting in the morning with the ENV project manager to prepare for the Planning Commission. Please let me or Roxanne know if you have any questions in the meantime.

Thanks for your help

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**From:** Lee, Jeffrey K [<mailto:jeffrey.lee3@honolulu.gov>]  
**Sent:** Thursday, August 31, 2017 3:45 PM  
**To:** James Niermann  
**Cc:** Young, Raymond; Takahashi, Eugene H.; Roxanne Lee  
**Subject:** Honouliuli WWTP SUP Follow-up questions

Good Afternoon Jim,

Just got some comments back from our Director, and wanted to follow up on some questions she had.

What is the level of nuisance odor now? And how much will it be reduced once the project is completed? (Possible measurement in the form of Hydrogen Sulfide)

Is the Cake Sludge Receiving Facility an accessory use to the HWWTP or is it a primary use, since it is processing sludge from other WWTPs?

Also could the Cake Sludge Receiving Facility be an enclosed area covering the whole truck during the transfer of solids to reduce odor nuisance?

Thank you,  
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This extends the property boundary north, west, and slightly east. Relocating the monitoring points from the fence line to the perimeter further away is expected to decrease the likelihood of permit exceedance. Odor dissipates as it mixes with air and travels further away from the source. Currently, monitoring protocol still requires monitoring of the original 13 fenceline stations. The fenceline monitoring stations map was recently revised to include additional stations at the new property line. The revised monitoring protocol and new fenceline monitoring locations will be implemented under the future DOH permit that will take effect when the current permit expires on April 24, 2013.

**Table 4-2. Honouliuli Wastewater Treatment Plant Recorded Noncompliant Events**

Date	Station #	Reading	Reason
October 23, 2009	7	33.0 ppb	Unknown – possibly from grit/pre-aeration tank area
April 17, 2009	9	185.0 ppb	Pre-aeration Tank covers removed for emergency repair of grit bucket and elevator chain
February 16, 2009	10	163.0 ppb	OCS out of service due to a breakdown in the VFD #1
October 9, 2008	10	64.4 ppb	OCS out of service due to a breakdown in the VFD #2
December 28, 2007	10	55.8 ppb	Fugitive emissions, high flows, light winds, and overcast

#### 4.1.2 Wind Direction

Wind direction and intensity determines where foul odor will move and whether it will dissipate. Prevailing trade winds blow from a northeast or east-northeast direction. Trade winds are the most common winds over Hawai'i, accounting for over 72 percent of all winds. Table 4-3 shows the percentages of trade winds and strong trade winds (gusts of winds at speeds of 15-25 miles per hour [mph]) over Oahu. During periods of strong winds (>15 mph), odors will be effectively dispersed, which minimizes odor concentrations and complaints. During periods of calm winds (<5 mph), odors will tend to accumulate in the area near the odor source and migrate off site in the direction of airflow. This results in increased odor concentrations and potential complaints.

**Table 4-3. Oahu Island Wind Summary (Typical Year)**

Month	Trade Wind Frequency (% of Days)	Strong Trade Wind Frequency (% of Days)	Avg. Wind Speed (mph)	Avg. Wind Direction
January	42%	9%	3	Southeast
February	55%	7%	7	Northeast
March	61%	10%	5	North-northeast
April	74%	10%	3	East-northeast
May	86%	7%	5	East-southeast
June	91%	7%	3	Northeast
July	95%	10%	6	Northeast
August	94%	7%	9	North-northeast
September	83%	4%	3	East
October	71%	4%	6	Northeast
November	64%	8%	3	East-northeast
December	57%	9%	3	East

Source: [http://www.pdc.org/web/high\\_wind.jsp?subq=1](http://www.pdc.org/web/high_wind.jsp?subq=1)

Dispersion modeling is presented in the *CCH Wastewater Odor Master Plan Final Draft Report* prepared by CH2MHILL.